NOTES

TWO NEW SPECIES OF *HILLIA* SUBG. *RAVNIA* (RUBIACEAE) FROM VENEZUELA AND MEXICO

Hillia Jacq. is a genus of about 24 species of succulent, usually epiphytic shrubs found throughout the moist and wet Neotropics. Subgenus *Ravnia* (Oersted) C. M. Taylor includes three species found in Costa Rica and Panama, plus the two species described below. The characteristics of this subgenus have been presented previously (Taylor, 1989). Recent collections have brought to scientific light the following two undescribed species, which are placed in subg. *Ravnia* based on the form and color of their corollas, which are tubular to narrowly funnelform, generally red in color, and presumably bird-pollinated.

Hillia rivalis C. M. Taylor, sp. nov. TYPE: Venezuela. Territorio Federal Amazonas: Depto. Atabapo, Cerro Marahuaca, 3°43′N, 65°30′W, 1,200 m, 16 Oct. 1988 (fl, fr), *R. Liesner 24900* (holotype, MO; isotype, VEN). Figure 1.

Frutex subsucculentus, saxicola, glaber, ca. 1 m altus. Folia peranguste elliptica, 38–100 × 5–10 mm, apice basique acuta; petiolo 6–12 mm longo; stipulis 10–13 × 3–4 mm. Flores solitarii, 6-meri; pedunculo 1–2 mm longo; lobulis calycinis peranguste triangularibus, 18–36 × 1.5–2 mm; corolla infundibuliformi, externe sordide rubra, interne luteoviridi, tubo 32–59 mm longo, lobulis 8–10 × 6–10 mm; antheris ex parte exsertis. Capsula cylindrica, laevis, 50–65 × 8–10 mm, stipite 10–15 mm longo.

Glabrous, somewhat succulent, lithophytic shrubs to 1 m tall; bark smooth, red-brown to gray-brown. *Leaves* isophyllous; *blades* narrowly elliptic, 3.8–10 × 0.5–1 cm, narrowly acute at apex and base, coriaceous and hard upon drying, glabrous; secondary veins 4–5 pairs, obscure, pinnate, ascending, the distal 1–2 veins looping to interconnect, the midrib prominulous abaxially, the margins slightly involute; *petioles* 6–12 mm long, glabrous; *stipules* narrowly elliptic or lanceolate, 10–13 × 3–4 mm, acutely to broadly angled, membranaceous, glabrous, caducous. *Flowers* solitary, 6-merous; peduncles 1–2 mm long; bracts linear, 12 × ca. 0.5 mm, acute; ovary cylindrical, ca. 1 cm long, glabrous; *calyx* limb green, coriaceous, glabrous, divided nearly to base, tube 0–1 mm long, the lobes very narrowly triangular to linear, 18–36 mm long, 1.5–2 mm wide at base, acute; *corolla* funnelform, membranaceous, dull red externally, yellow-green internally, glabrous throughout, tube 3.2–5.9 cm long, 3–3.5 mm wide at base, the lobes triangular, 0.8–1 cm long, 6–10 mm wide at base, rounded to acutely angled, reflexed to revolute; *stamens* partially exserted, filaments 3–4 mm long, inserted ca. 4–6 mm below mouth of tube, anthers 8–9 mm long; *style* 3.4–6.5 cm long, stigma exserted, capitate, ca. 1–2 mm diam. *Capsules* cylindrical, woody to rather papery, brown, smooth, 5–6.5 cm long, 0.8–1 cm diam., borne on a stipe 1–1.5 cm long; *seeds* 1.5 × ca. 0.3–0.5 mm, with trichomes 1.2–1.5 cm long.

This new species was found growing on rocks in and along rivers, a habitat that has not been previously reported in *Hillia*, and which is emphasized in the specific epithet. One site was inundated a few days after the specimen was collected (R. Liesner, pers. comm.); presumably these perennial plants are adapted to such disturbance. In habit, leaf morphology, and capsule texture, *H. rivalis* strongly resembles the Mesoamerican shrub *Lindenia rivalis* Bentham, which grows in similar sites. These genera are apparently not closely related, and the resemblance is apparently one of convergence.

Hillia rivalis can be distinguished by its remarkably long, narrow calyx lobes, funnelform corollas that are red externally but yellow-green internally, relatively narrow leaves, and riverine habitat.

The floral morphology of this species strongly resembles that of several other species of *Hillia* with funnelform green corollas and pinnate leaf

FIGURE 1. *Hillia rivalis* (*Liesner 24900* MO), habit.

venation, notably *H. psammophila* Steyermark, *H. illustris* (Vellozo) K. Schumann, *H. foldatsii* Steyermark, and *H. saldanhaei* K. Schumann (Taylor, in prep.). The characteristics found in this species provide further evidence of a close relationship between the former genus *Ravnia* and *Hillia*.

This is the first report of a member of this subgenus from South America. The rather wide ranges of calyx lobe, corolla, and style dimensions

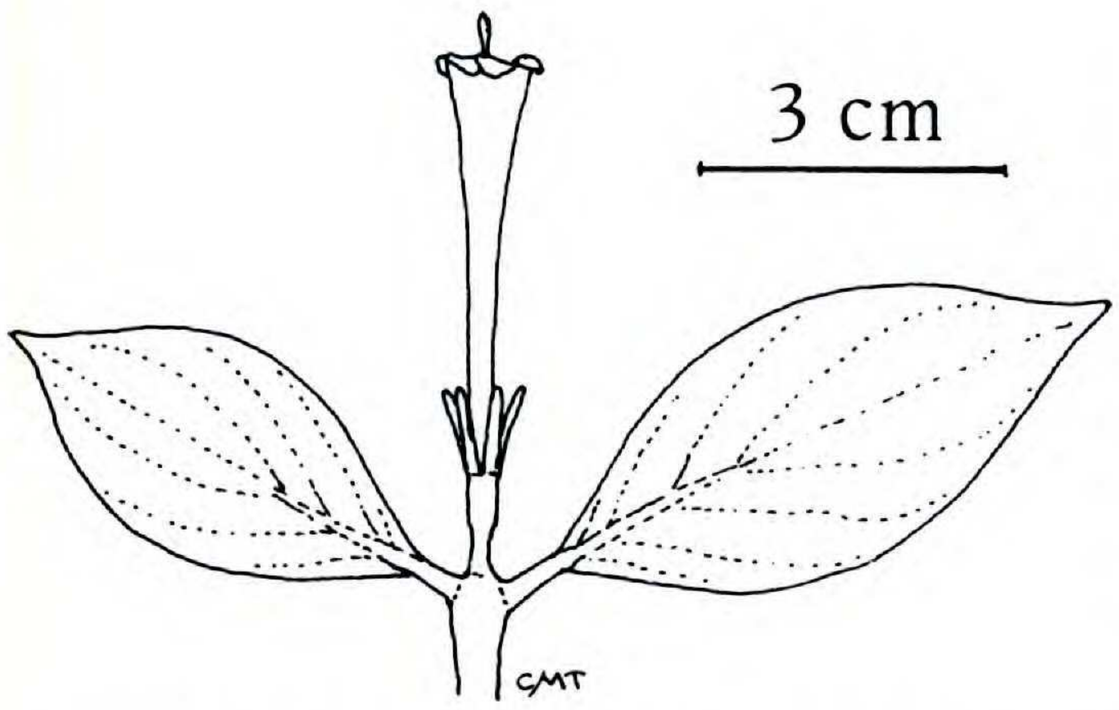

FIGURE 2. *Hillia oaxacana* (*Garcia M. & Torres C. 1523* MO), habit.

are derived from measurements of apparently mature structures all found in the same collection. Comparable variation is found in other species of *Hillia* (Taylor, in prep.).

Paratype. VENEZUELA. TERRITORIO FEDERAL AMAZONAS: Depto. Atabapo, Cerro Marahuaca, 3°38′N, 65°28′W, 1,225 m, 19 Feb. 1985 (fr), *R. Liesner 17712* (MO).

Hillia oaxacana C. M. Taylor, sp. nov. TYPE: Mexico. Oaxaca: distrito de Putla, Arroyo de San Isidro, 3 km al este de Concepción, Buenavista, 10 June 1985 (fl), *A. Garcia M. & R. Torres C. 1523* (holotype, MO; isotype, MEXU). Figure 2.

Frutex succulentus hemiepiphyticus, glaber. Folia elliptica, 4.2–6 × 2–2.5 cm, apice acuminata, basi cuneata; petiolo 5–8 mm longo. Flores solitarii, 6-meri; pedunculo 2–3 mm longo; lobulis calycinis lingulatis, ca. 6 × 1.5–2 mm; corolla tubiformi vel anguste infundibuliforme, tubo rubro ca. 3.8 cm longo, lobulis viridibus ca. 2.5 × 2.5 mm; antheris inclusis. Capsula ignota.

Glabrous, succulent, hemiepiphytic shrubs; bark smooth, gray. *Leaves* isophyllous; blades *elliptic*, 4.2–6 × 2–2.5 cm, acuminate at apex with the tip ca. 5 mm long, cuneate at base, subcoriaceous, glabrous; secondary veins 3–4 pairs, rather obscure, subpalmate, ascending, not looping to interconnect, not prominulous, margins straight; *petioles* 5–8 mm long, glabrous; *stipules* not seen. *Flowers* solitary, 6-merous; peduncles 2–3 mm long; bracts absent; ovary cylindrical, ca. 3 mm long, glabrous; *calyx* limb green, membranaceous, glabrous, divided to base, the lobes narrowly triangular, 6 mm long, 1.5–2 mm wide at base, rounded; *corolla* tubular to narrowly funnelform, carnose, red in tube, green on lobes, glabrous throughout, tube 3.8 cm long, 2 mm wide at base, the lobes triangular, 2.5 × 2.5 mm, broadly rounded, spreading to reflexed; *stamens* included, inserted above middle of tube, anthers 4 mm long, held 1–2 mm below mouth of tube; *style* 4 cm long, stigma exserted, with two clavate branches ca. 3 mm long. *Capsules* not known.

Hillia oaxacana can be distinguished by its tubular red corollas with green lobes and its leaves with the secondary veins all arising from below the middle of the blade ("subpalmate"). In its corollas, *H. oaxacana* is similar to *H. longifilamentosa* (Steyerm.) C. M. Taylor of Costa Rica and Panama, which differs in its completely red-orange corollas and long-exserted stamens. This new species is also similar to *H. saldanhaei* K. Schumann of Brazil, a poorly known species with similarly shaped but green corollas with lobes 6–7 mm long. Similar subpalmate leaf venation is found only in *H. ulei* K. Krause of Amazonian South America, which differs in its broadly funnelform green corollas. (*Hillia ulei* is here treated to include *H. viridiflora* Kuhlmann & Silveira, *H. irwinii* Steyermark, and *H. schultesii* Steyermark.) Reported here is the northernmost record of a member of subg. *Ravnia*. Specimens of the type collection were originally annotated and distributed as *H. macrocarpa* Standley & Steyermark, which *H. oaxacana* keys out to in the Rubiaceae treatment for the *Flora of Guatemala* (Standley & Williams, 1975).

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